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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,702	02/10/2004	Matthew J. Adiletta	10559-078003	3432

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MINNEAPOLIS, MN 55440-1022

EXAMINER
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PEIKARI, BEHZAD

ART UNIT	PAPER NUMBER
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2189

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/776,702

Applicant(s)

ADILETTA ET AL.

Examiner

B. James Peikari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 4/26/04 & 5/13/05.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because of minor informalities including:
  - (A) In Figure 1, "Flash ROM" should replace "FlashRom".
  - (B) In Figures 4B and 5B, "AMBA" and "Amba" are used interchangeably.
  - (C) In Figures 4B and 5B, "Queue" and "Q" are used interchangeably.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

2. The specification is objected to because:

(A) The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

(B) The parent application information in the first paragraph on page 1 should be updated, i.e., “, now U.S. Patent No. 6,728,845”.

3. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 18-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(A) As for claim 18, line 6, “an order queue to queue ordered requests” is vague and confusing. This language does not represent the order queue described in the specification. The requests are kept in a default queue -- the order queue, to keep them in a specific order when the even/odd option is not selected. Note pages 29 and 30 of the specification.

To overcome this rejection, line 6 should be replaced with the following:

“an order queue that maintains the order of reference requests by allowing a processor to have multiple memory references outstanding of which only its last memory reference needs to signal a completion”.

(B) As for claim 19, is vague and does not represent the read lock fail queue described in the specification. The claim suggests that requests will be sent to locked memory, whereas this queue contains requests that have already failed because memory was locked.

To overcome this rejection, line 2 should be replaced with the following:  
“queue to hold read memory reference requests that fail because of a lock existing on a portion of memory”.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 18, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter et al., U.S. 6,665,699, in view of Kleist et al., U.S. 3,623,001.

(A) As for claim 18, Hunter et al. teaches a method of controlling access to a Static Random Access Memory (*note column 2, lines 62*), the method comprising:

providing a set of queues (*note dispatch queues 130*) that store entries for requests received from multiple programmable processors (*note processors 90*), the set including:

a read queue to queue read requests (*note that all of the dispatch queues are read/write queues, which include within their scope the claimed "read queue", since they queue read requests*); and

an order queue to queue ordered requests (*note that the claimed "order queue" is simply a default queue for storing requests in order, which are included in the scope of the generic read/write dispatch queues*).

As for consecutively servicing chained requests in a one of the queues before servicing another one of the queues, this is not explicitly stated in Hunter et al., although it is suggested. Note column 4, lines 39-40, which state, "when a processor *finishes* what it is currently doing, it looks in the dispatch queues 130 for the next thing to do" (emphasis added). Furthermore, in every example of chained requests given in the Hunter et al. system, the chain is executed to completion, barring special interrupts. However, the benefits of allowing a chain of commands to run to completion before switching to a next task are well known to one of ordinary skill in the art. As an example, the concept is described more eloquently for data processing systems in general in Kleist et al., column 9, lines 11-28.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to consecutively service chained requests in a one of the queues before servicing another one of the queues in the system of Hunter et al., as suggested

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by Kleist et al., since (1) Hunter et al. states , “when a processor finishes what it is currently doing, it looks in the dispatch queues 130 for the next thing to do”, (2) in every example of chained requests given in the Hunter et al. system, the chain is executed to completion, barring special interrupts, and, most importantly, (3) allowing chains of commands to run to completion reduces the error rate in data processing and thus results in more efficient performance.

(B) As for claim 21, wherein the set of queues further comprises a read/write queue (*note that all of the dispatch queues are read/write queues because they contain both input and output operations for the processors; note Hunter et al., column 4, lines 37-50*) to store queue entries for memory requests received from a core processor (*i.e., one of the processors 90*).

(C) As for claim 22, further comprising receiving packets (*i.e., “chunk of data”, note column 1, line 33, or simply “data”, note Hunter et al., column 2, line 55*) via at least one media access controller (*note control unit 86*)

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 18-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,427,196. Although the conflicting claims are not identical, they are not patentably distinct from each other because each of the features of the present claims is either explicitly taught or suggested by the claims of the patent.

10. Claims 18-22 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,728,845. Although the conflicting claims are not identical, they are not patentably distinct from each other because each of the features of the present claims is either explicitly taught or suggested by the claims of the patent.



***Allowable Subject Matter***

11. Claims 19 and 20 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, including the corrections to claims 18 and 19 suggested by the examiner above and accompanied by terminal disclaimers in accordance with Sections 8-10 of this Office action.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Peikari whose telephone number is (571) 272-4185. The examiner is generally available between 7:00 am and 7:30 pm, EST, Monday through Wednesday, and between 5:30 am and 4:00 pm on Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald Bragdon, can be reached at (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'B. James Peikari', with a long horizontal stroke extending to the right.

B. James Peikari  
Primary Examiner  
Art Unit 2189  
1/4/07